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WITH THE CORN BORER

OF ENTOMOLOGY
1928
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Issued in the interest of corn-borer control conducted by the United States Department of Agriculture in cooperation with the State departments of agriculture and State agricultural colleges in New York, Pennsylvania, Ohio, Michigan, and Indiana.

No. 38 Washington, D.C. April 28, 1928

CORN-BORER BOOKSHELF

Do You Want To Know The Latest About the Corn Borer?
This begins a list of articles appearing recently in magazines:

"Westward comes the corn borer! And Kansas Already is digging the trenches needed in the coming war," by L.E.Call, Kansas Farmer, Feb. 25, 1928.
"Our War against the insects," by E. Frazer, Saturday Evening Post, Jan. 7, 1928.
"Corn-Borer Control by Mechanical Means," by C.O.Reed, Journal of the American Society of Agricultural Engineers, February, 1928.
"The Fight to Protect Old King Corn," by C.O.Reed, Farm Implement News, Jan. 7, 1928.

List of latest United States Department of Agriculture Bulletins.
"A Progress Report on the Investigations of the European Corn Borer," Department Bulletin 1476.
"Scouting, Quarantine, and Control for the European Corn Borer, 1917 - 1926." Technical Bulletin 53.
"The European Corn Borer, Its Present Status and Methods of Control," Farmers Bulletin 1548.
"Farm Practices Under Corn-Borer Conditions," Farmers' Bulletin 1562.

LUCAS COUNTY, OHIO, FARMERS WANT CLEAN-UP

The farmers of Lucas County, Ohio, one of the heaviest infested counties in the United States before last year's campaign, wants another good clean-up this year and have asked the Ohio State Department of Agriculture to aid in obtaining a thorough clean-up in Lucas County, this spring.

Address communications to Information Division, Corn-Borer Control, Extension Service, United States Department of Agriculture, Washington, D. C.

AGRONOMIC EXPERIMENTS

Early in May, it is planned to begin the plantings on the experimental plots in the heavily infested area at Bono, Ohio, where scientists are attacking the corn-borer problem from the agronomic side. These experiments are being conducted by the Bureau of Plant Industry and Bureau of Entomology, United States Department of Agriculture, and the Ohio Agricultural Experiment Station, and will cover the following points:

I. Different varieties of corn planted at different dates and rates to determine the relative yields of sound corn and the degree of infestation and damage by the borer, the effects of different fertilizers and cultural practices on yield of corn and borer damage.

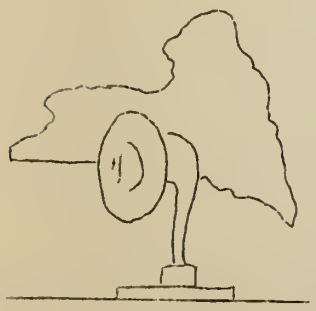
II. Isolation of selfed lines of corn and testing crosses between them for yield and for resistance or tolerance to the corn borer; also breeding corn for productiveness when planted at an abnormal time to escape the heaviest attack of the corn borer.

III. Studies on the escapement from and tolerance to corn borer attack in relation to the condition and character of corn plants as determined by time, environmental and hereditary factors.

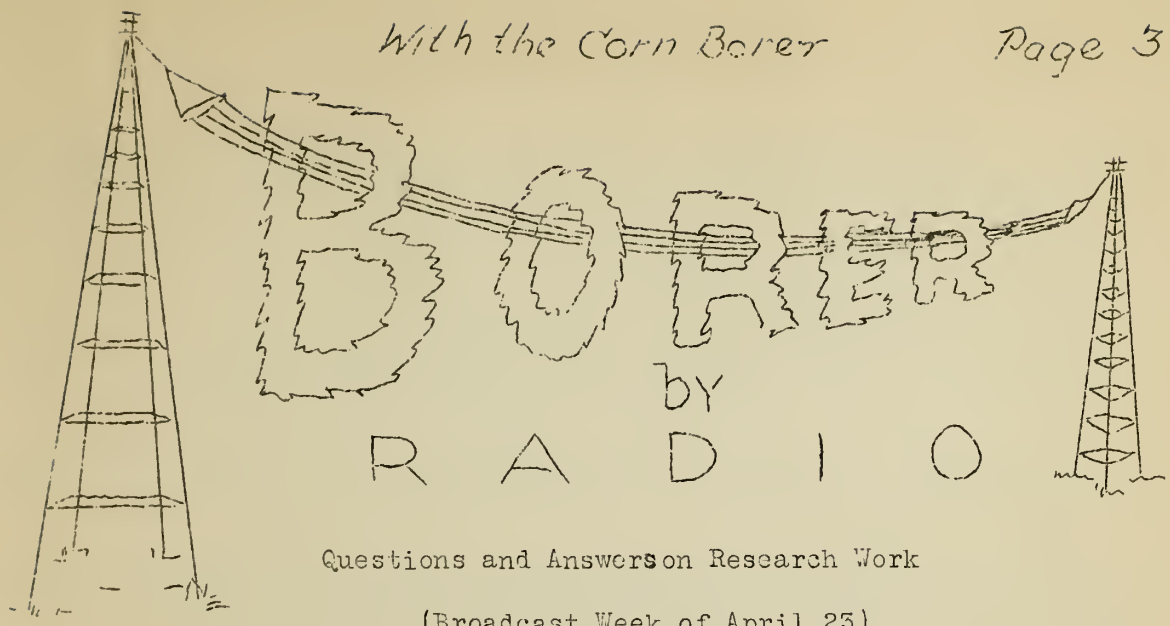
IV. Research on the physiology of the corn plant with reference to those processes which might be developed to modify corn-borer infestation and damage.

The experiments at Bono are being supplemented by experimental work at Columbus and Wooster, Ohio.

IN THE STATE OF NEW YORK



The 10-minute radio talks over WGR, Buffalo, N.Y., have proved very helpful in the educational campaign. Edward Towne, chairman of the Niagara county corn-borer committee, spoke April 23 on "How the public can cope with the corn borer," and on April 30, James Hall, of the Chautauqua County Farm Bureau and chairman of the county's corn-borer committee, will speak on "The farmers' cooperation with State and Federal agencies in corn-borer control."



Questions and Answers on Research Work

(Broadcast Week of April 23)

QUESTION: How long have American scientists been studying the European corn borer?

ANSWER: Since the discovery, in the summer of 1917, of the corn borer, in the vicinity of Boston, Mass., scientists of this country have studied the insect and tried out methods of controlling it. As this undesirable alien has been found at points nearer the Corn Belt, efforts to find means of halting it have doubled and redoubled. Some of the milestones along the way of the borer's westward march are these: The discovery during the latter part of September, 1919, of an infestation on a farm in Erie County, N. Y.; the findings, in August, 1920, of corn borers in Welland, Middlesex, and Elgin Counties, Ontario, Canada; the definite knowledge, by the close of 1924, that the insect was present in practically all of the territory along the shores of Lake Erie, and a short distance inland.

QUESTION: Well, how do the Federal and State workers go about keeping down the corn borer?

ANSWER: The work is carried on in three divisions: First, scouting to locate unknown or newly infested areas, and to fix the boundaries of areas already known to be infested; second, quarantine to keep products infested with the borer from being transported into clean territory; third, clean-up work to reduce the numbers of the pest in badly infested areas, or to keep down infestations that are especially dangerous of their locations or other characteristics.

QUESTION: What's the net result of the investigations into clean-up problems--what methods have been found effective in controlling the corn borer?

ANSWER: In a nutshell, here's the result: MECHANICAL METHODS OF KILLING THE BORERS IN CORNSTALKS AFTER THE CORN HAS BEEN HARVESTED ARE THE MOST EFFECTIVE AT PRESENT. The borers can be destroyed by burning stalks and other plant material, by feeding to livestock, by shredding or ensiling, or by any other method which completely destroys remnants of last year's corn crop. If all these remnants are destroyed before June 1, the borers overwintering in the stalks are killed. The June 1 date is important, because in June the borers change into moths which fly about laying the eggs that produce the current year's crop of borers.

QUESTION: The farmer's own ingenuity helps quite a bit in corn-borer control, doesn't it?

ANSWER: Certainly the individual carrying on the control work has a chance to figure out the best methods of doing what has to be done. An instance of Yankee inventiveness finding the most practical way to keep down corn borers comes from Eden Valley, N. Y., a vegetable gardening district. There the growers use a common disk in control work.

After harvesting their corn and removing the stalks from the field, Eden Valley growers work over the fields with a disk, chopping up and driving into the ground a good part of the stubble. Next they plant a fall crop of rye. The following spring they plow the rye under.

This plan, say the growers, buries the stubble beyond danger of its being uprooted, and also, through the plowing under of the green rye, adds humus to their land.

Eden Valley is in the heart of Erie County's worst infested area. Sweet corn, which is even more susceptible to corn-borer damage than field corn, is grown there in great quantities. But the local farmers have found that their unique method of fitting their fields has got the corn borer pretty well under control.

QUESTION: It's good to know that ordinary farm machinery can be used in borer control. But tell me, what work have the research men done on special control machinery?

ANSWER: The State experiment stations, the United States Department of Agriculture, and farm machinery manufacturers all have been trying to develop more practical and effective machinery. Several reliable home-made devices, such as the stalk shaver, have been worked out. Directions for building this little machine can be obtained from the Ohio Extension Service at Columbus, or the European corn-borer control headquarters at Toledo, Ohio.

The low-cutting attachment for corn binders worked out last year makes it possible to leave stubble less than 2 inches high, which is satisfactory for corn-borer control. The stubble beater, a light machine for pulverizing stubble, drawn by a tractor, has been found practical for operation in smooth fields where the stubble is less than 10 inches high.

QUESTION: But are we always going to be obliged to follow these laborious methods of corn-borer control? How about finding corn varieties which will resist borer attacks? Or quick-maturing varieties which can be planted late enough to escape corn-borer damage?

ANSWER: No one can say exactly. Studies are now being carried on to determine the effect of time of planting on the corn borer, and efforts are being made to develop resistant and tolerant varieties of corn. But the results so far do not warrant widespread use of these methods of control.

QUESTION: Where are the studies being made?

ANSWER: The United States Department of Agriculture, in cooperation with the Ohio Experiment Station, is conducting work of this sort at Bono, Ohio; and, in cooperation with the Michigan Experiment Station, at Monroe, Mich. Several other infested States, and some of the States bordering on the infested regions also are doing experimental work on these problems.

QUESTION: How long will research work be carried on--is it necessary to continue the investigations?

ANSWER: Indeed, research is necessary. It is the basis of all control methods. Until the corn borer is brought under adequate control and is no longer a menace to the corn crop of the United States, the study of the corn borer and means of control must be kept up.

The best trained specialists in the country, State specialists as well as Federal specialists, entomologists, agricultural engineers, agronomists, and other agricultural scientists are employed in investigations of corn-borer problems. They are studying and will continue to study the life history, habits, and relation of the corn borer to environment; the breeding of varieties of corn adapted to borer conditions; the development of parasites of the borer; and the improvement of machinery for mechanical control.